TAOGLAS®

Datasheet

Part No:
CGGP.35.2.A.08

Description:

35mm with 2mm Low-Profile

GPS/GLONASS/Galileo Dual-Band Ceramic Patch Antenna

Features:

4.27dBi Peak Gain for GPS/Galileo Band

4.63dBi Peak Gain for GLONASS Band

Low Profile – 2mm Height

Pin Type Ceramic Patch Antenna

Manufactured in an IATF16949 Approved Facility Dims: 35*35*2mm

RoHS & REACH Compliant

1. Introduction

The CGGP.35.2.A.08 is a low profile ceramic GPS/GLONASS/Galileo passive patch antenna with a thickness of 2mm. It was designed for vehicle navigation applications as well as other M2M/IoT devices. Typical applicable industries are transportation, defense, marine, agriculture and navigation.

The antenna has been tuned on a 70*70mm ground plane, working at 1575.42MHz and 1602MHz, with 4.27dBi gain and 4.63dBi gain, respectively. The low profile design makes this antenna perfect for applications where space is limited. It can be easily through-hole mounted on PCB via pin. Double sided adhesive on the bottom of the patch helps to keep it in place while undergoing mounting. The CGGP.35.2.A.08 is manufactured and tested in a TS16949 first tier automotive approved facility.

For large volume GPS/GLONASS/Galileo projects where performance is paramount, tuning for customer specific device environments and ground-plane sizes is needed, so custom tuned patch antennas should always be used. Taoglas can also provide different pin lengths for these antennas, subject to potential NRE and MOQ. For more details please contact your regional Taoglas customer support team.
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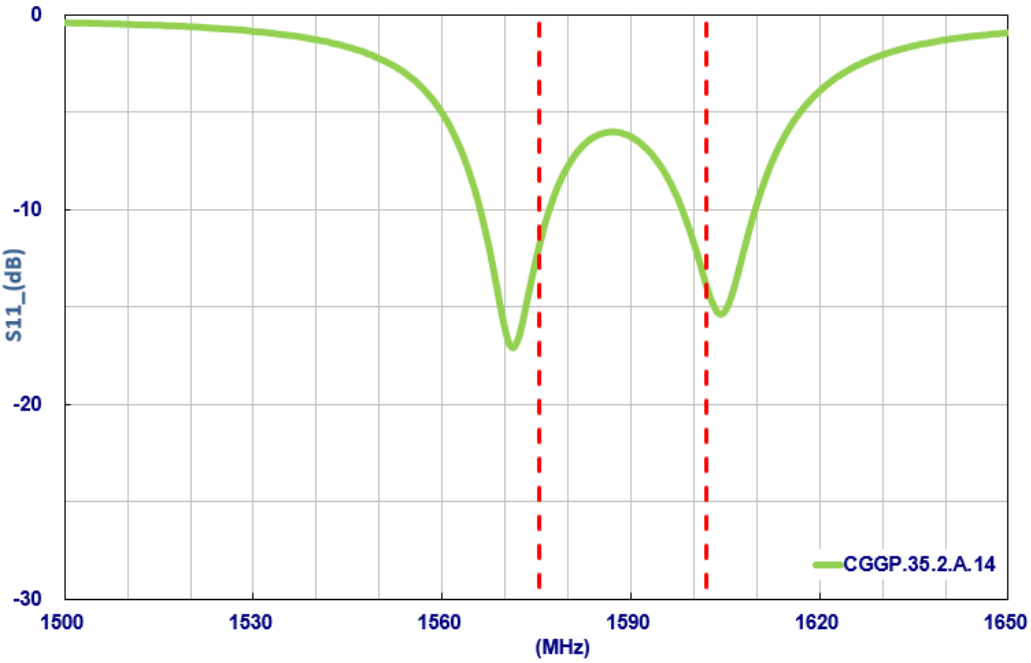
2. Specifications

Electrical		
Application Bands	GPS/GALILEO	GLONASS
Operation Frequency	1575.42 ±1.023MHz	1602 ±5MHz
Return Loss	-10dB max.	
Peak Gain	4.27dBi	4.63dBi
Efficiency	69.73%	71.98%
Impedance	50Ω	
Mechanical		
Ceramic Dimension	35*35*2mm	
Pin Diameter	0.85mm	
Pin Length	2.4mm	
Weight	3g	
Environmental		
Storage Temperature	-40°C to 85°C	
Operation Temperature	-40°C to 85°C	
Moisture Sensitivity	Level 3	

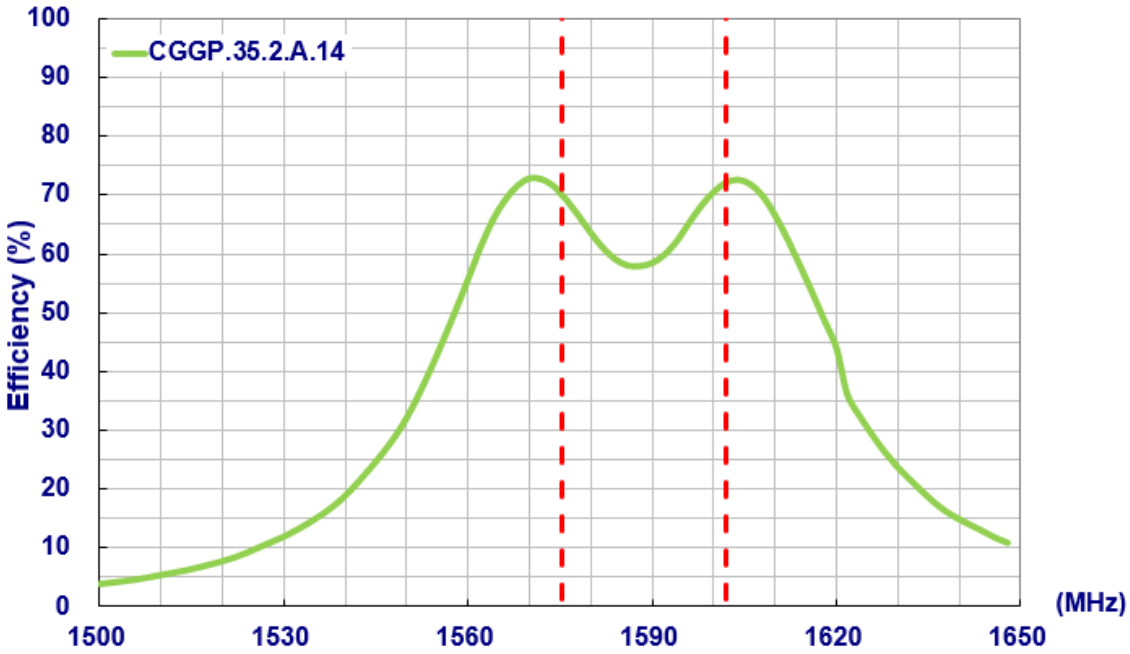
* Antenna properties were measured with the antenna mounted on 70*70mm Ground Plane

3. Antenna Characteristics

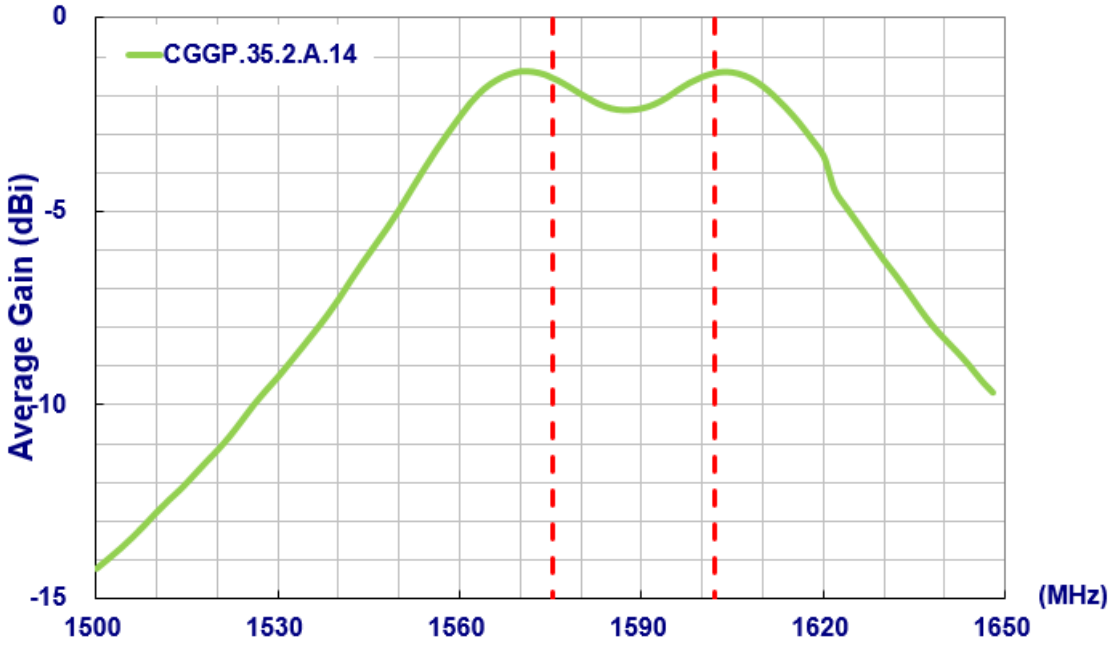
3.1 Return Loss



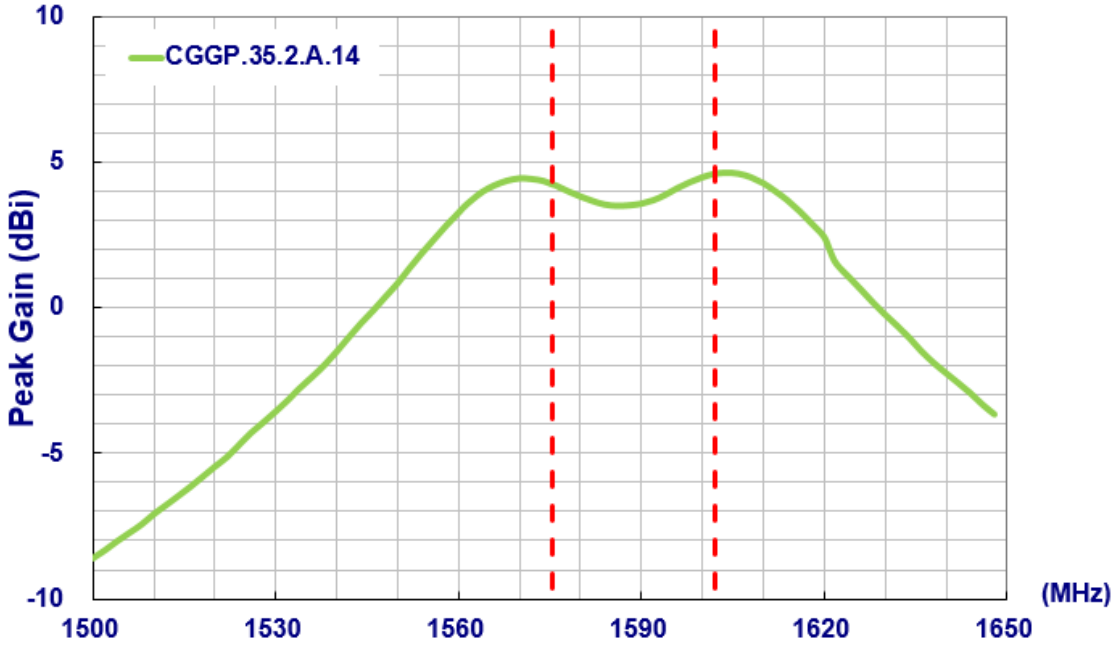
3.2 Efficiency



3.3 Average Gain



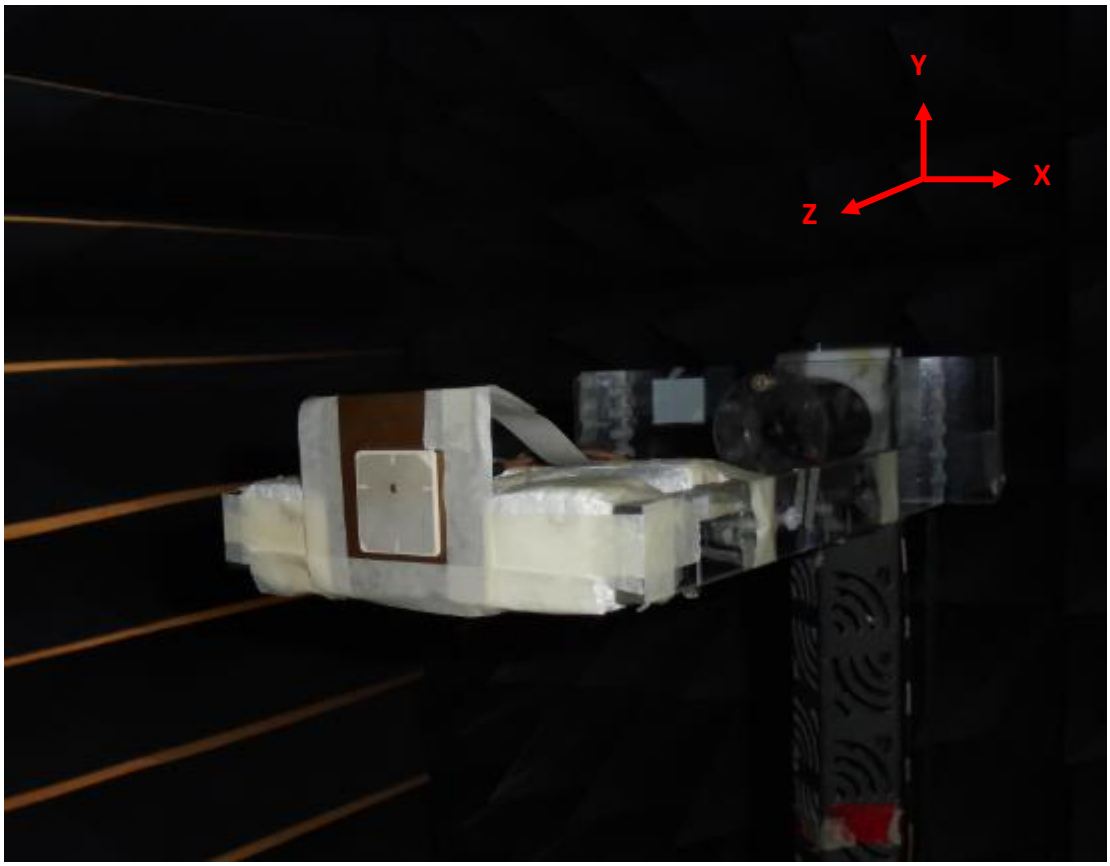
3.4 Peak Gain



4. Antenna Radiation Pattern

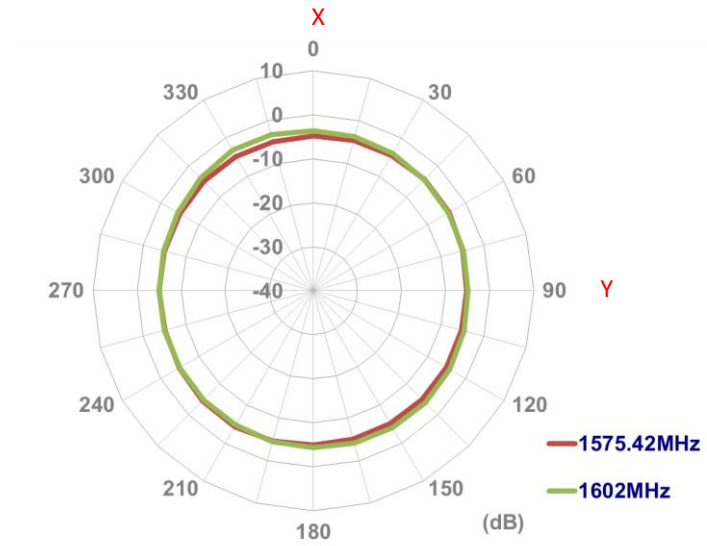
4.1 Measurement Setup

The CGGP.35.2.A.08 antenna is tested with 70*70mm ground plane in a CTIA certified ETS-Lindgren Anechoic Chamber. The test setup is shown below.

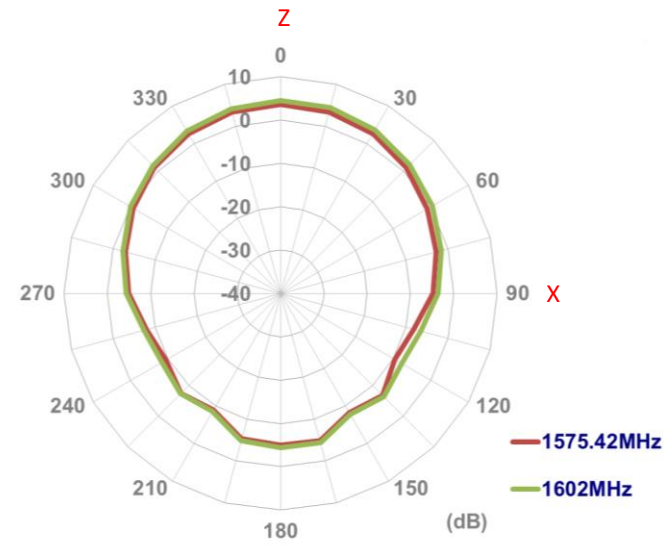


4.2 2D Radiation Pattern

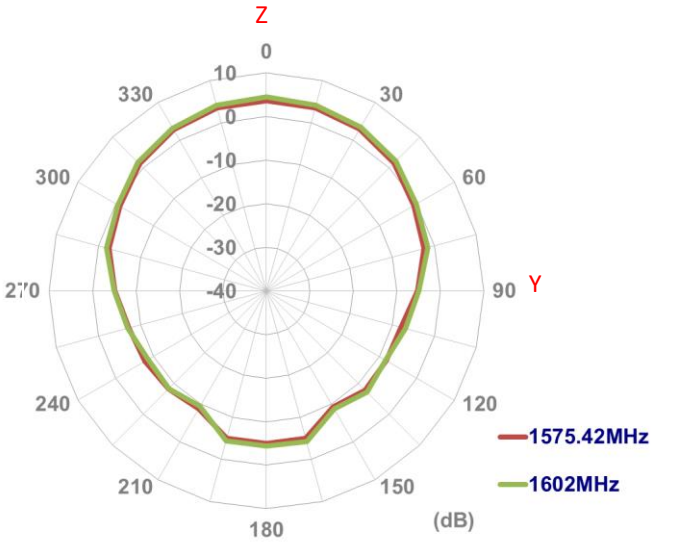
XY Plane



XZ Plane

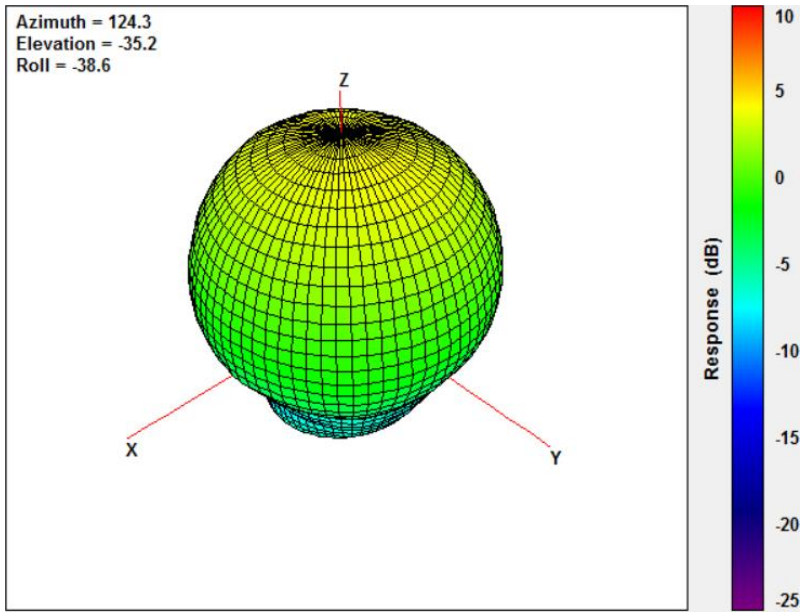


YZ Plane

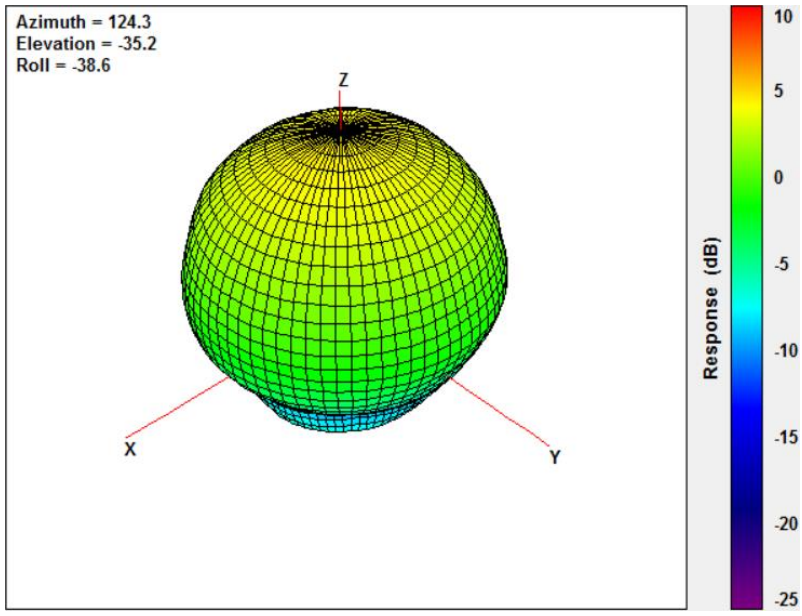


4.3 3D Radiation Pattern

1575.42MHz



1602MHz

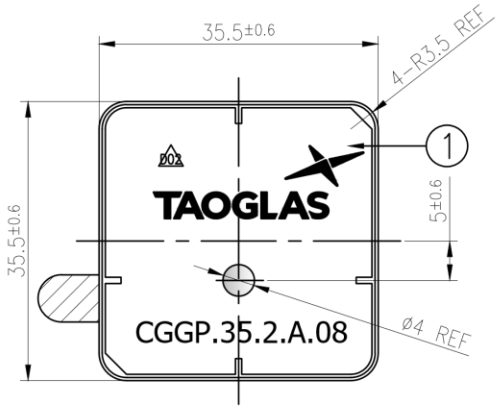


5. Mechanical Drawing (Unit: mm)

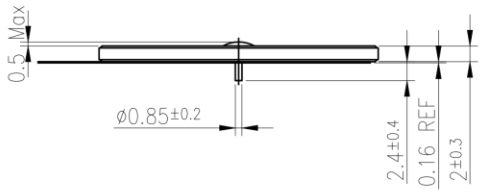
ISO NO: IDW-18-8-4433 <Release>

REV	ZONE	DESCRIPTION	ENG	APPROVED	ISSUED DATE
D01	ALL	Initial Design	Haley	Paul	2017/04/21
D02	ALL	Replace the new LOGO <ECR-18-8-259>	Karry	Aaron	2023/02/01

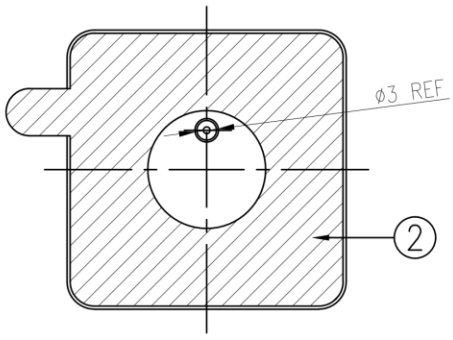
Top



Side



Bottom



Note:
1.Double sided adhesive area.
2."*"Critical Dimensions.

	Name	P/N	Material	Finish	QTY
1	Patch	001517D050000A	Ceramic	Clear	1
2	Double sided Adhesive	001517D050000A	NITTO 5000NS	White Liner	1

UNLESS OTHERWISE SPECFIED TOLERANCES ON:
.X± 0.2
XX.± 0.5 .XX± 0.1
X.± 0.3 .XXX± 0.05

DATE: 2017/04/21 | MAT'L:
UNIT: mm | FINISH:
THIRD ANGLE PROJECTION | SCALE: 1.25/1

D02 TAOGLAS. TW Design Centre

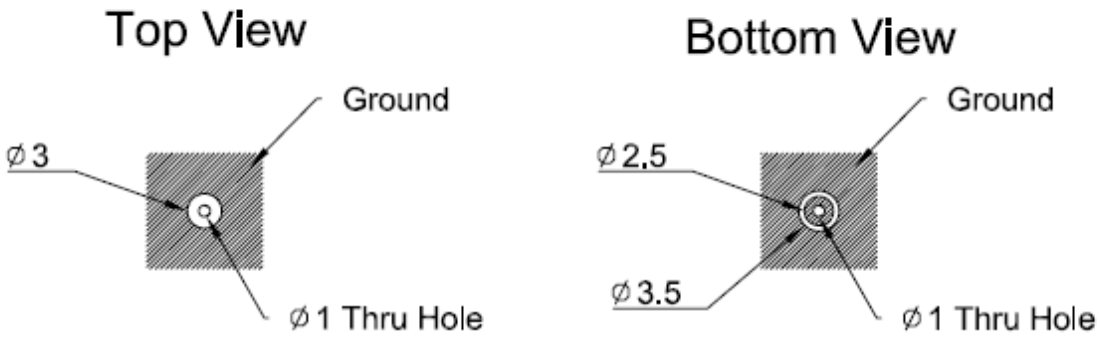
REV D02

TITLE. : GPS/GLONASS Dual-Band Patch Antenna 35*35*2mm – 2.4mm pin

PART NO. : CGGP.35.2.A.08

APPROVED BY:	CHECKED BY:	DRAWN BY:	CUSTOMERS SIGNATURE / DATE
Paul	Jack	Haley	

6. PCB Footprint Recommendation



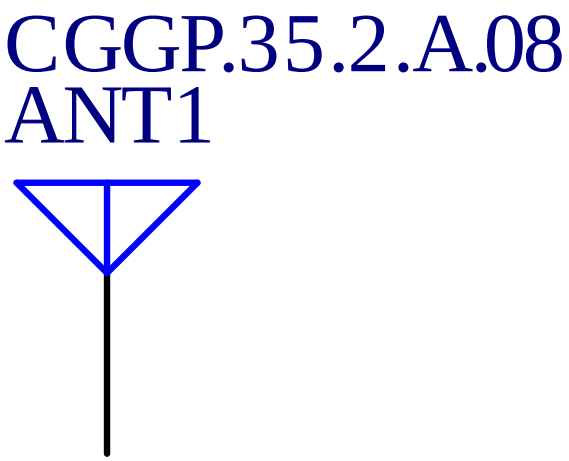
Tolerance: +/- 0.20
Unit:mm

7. Antenna Integration Guide

7.1 Schematic Symbol and Pin Definition

The circuit symbol for the antenna is shown below. The antenna has 1 pin as indicated below.

Pin	Description
1	RF Feed



7.2 Antenna Integration

The antenna should be placed at the center of the ground plane with a length and width of 70mm. Maintaining a square symmetric ground plane shape and symmetric environment around the antenna is critical to maintaining the excellent axial ratio and phase center performance shown in this datasheet.

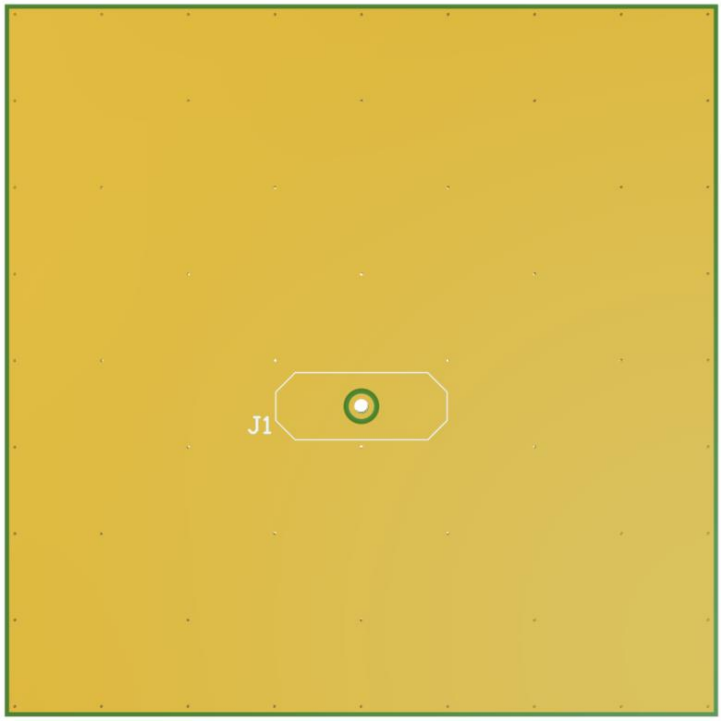
Top Side w/ Solder Mask

Top Side w/o Solder Mask

7.3 PCB Layout

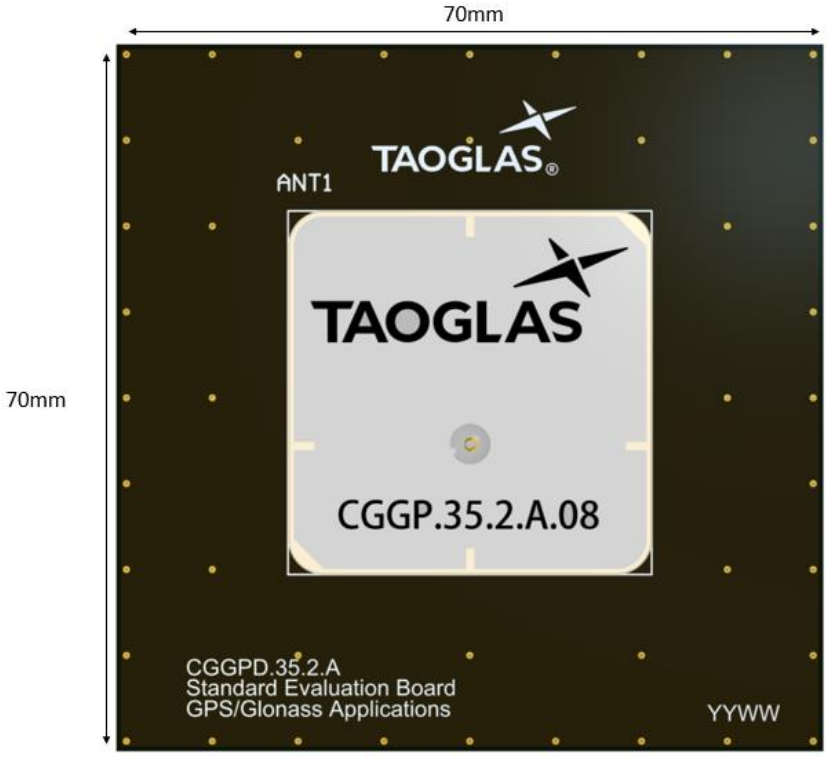
The footprint and clearance on the PCB must comply with the antenna specification. The PCB layout shown in the diagram below demonstrates the antenna footprint.

Topside

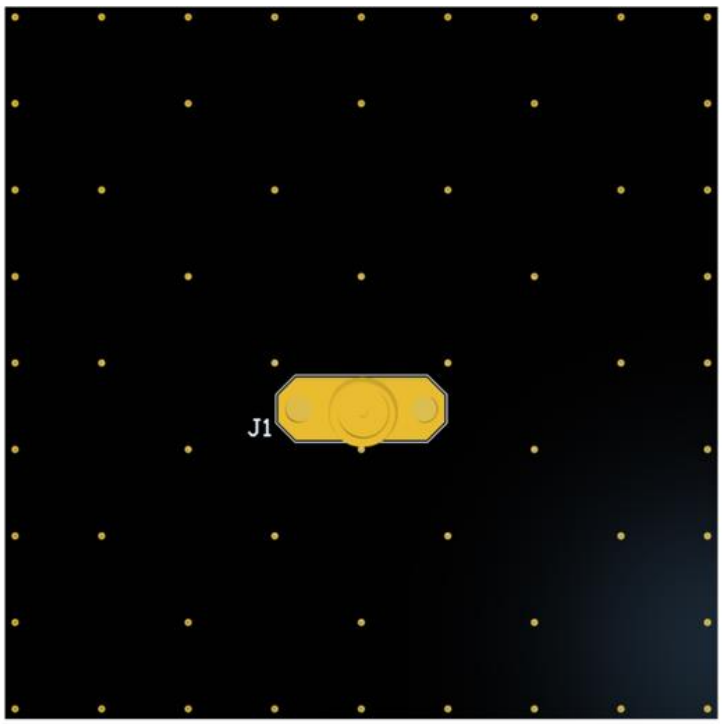


Bottom Side

7.4 Evaluation Board



Topside

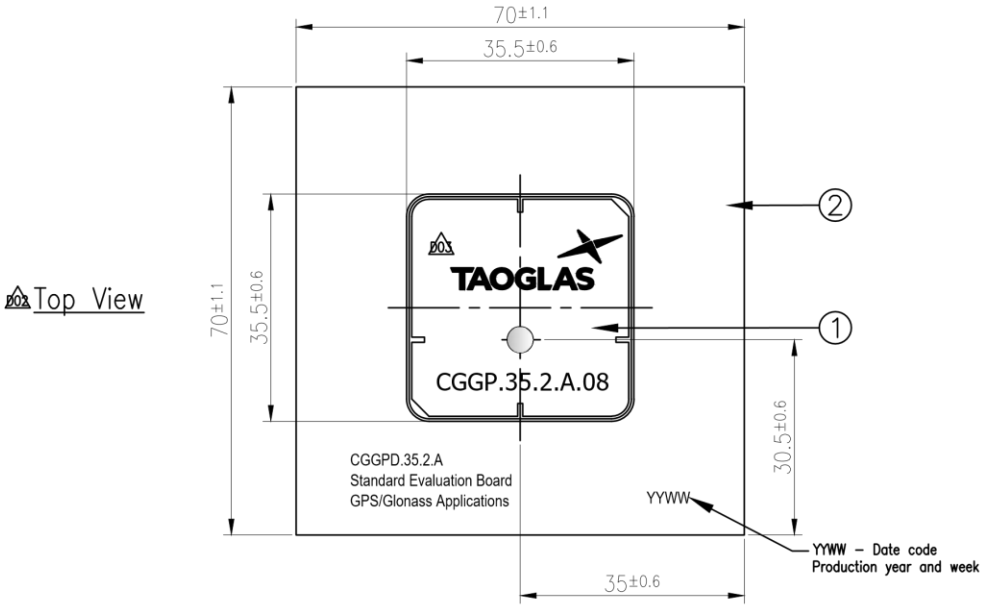


Bottom Side

8. Evaluation Board Mechanical Drawing (Unit: mm)

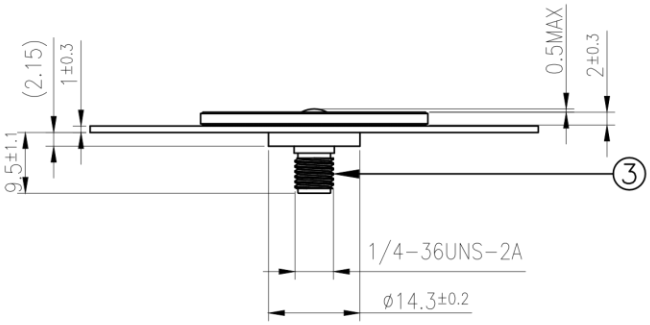
ISO NO: EDW-18-8-4445 <Release>

REV	ZONE	DESCRIPTION	ENG	APPROVED	ISSUED DATE
D01	ALL	Initial Design	Bonnie	Paul	2017/04/10
D02	ALL	Amend Patch Text Printing & Title	Haley	Paul	2017/04/21
D03	ALL	Replace the new LOGO <ECR-18-8-259>	Karry	Aaron	2023/02/01



D02 Top View

Side View



NOTES:
1.All material must be RoHS compliant.
2.Open/short QC, VSWR required.

	Name	P/N	Material	Finish	QTY
1	Patch	001517D050000A	Ceramic	Clear	1
2	Ground-Plane	000517D000000A	Composite 1.0t	Black	1
3	SMA(F) ST	200417D000000A	Brass	Au Plated	1

UNLESS OTHERWISE SPECFIED TOLERANCES ON: .X± 0.2 XX.± 0.5 .XX± 0.1 X.± 0.3 .XXX± 0.05

DATE: 2017/04/10 | MAT'L:

UNIT: mm | FINISH:

THIRD ANGLE PROJECTION | SCALE: 1/1

APPROVED BY: Paul | CHECKED BY: David/Haley | DRAWN BY: Bonnie | CUSTOMERS SIGNATURE / DATE

D03 TAOGLAS. TW Design Centre

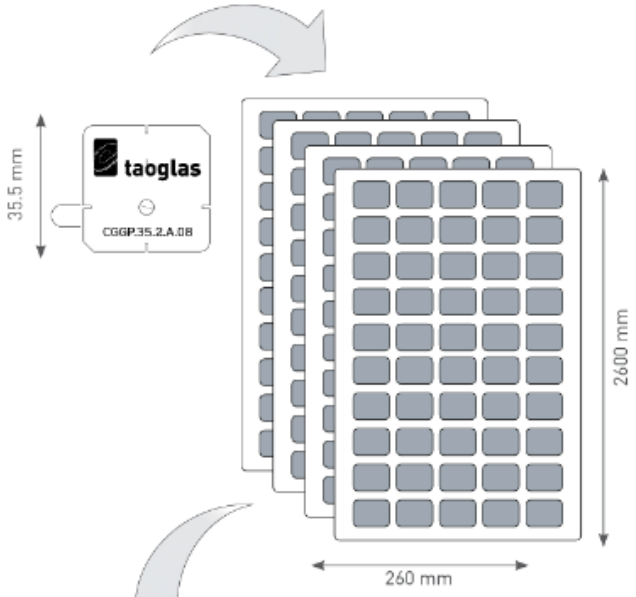
REV D03

TITLE. : GPS/GLONASS Dual-Band Patch Antenna 35*35*2mm – CGGP.35.2.A.08 on EVB D02

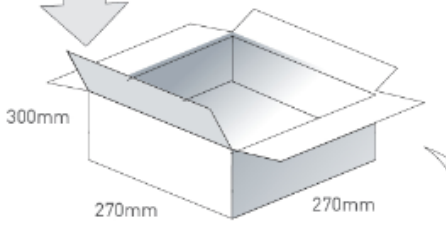
PART NO. : CGGPD.35.2.A

9. Packaging

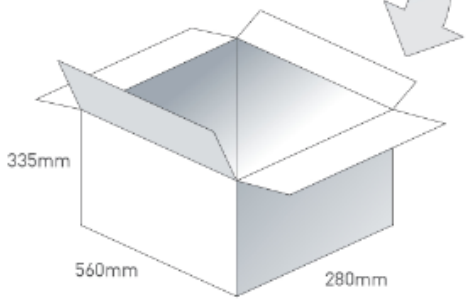
100 pcs CGGP.35.2.A.08 per tray
Tray Dimensions - 260*260*80mm
Weight - 94g



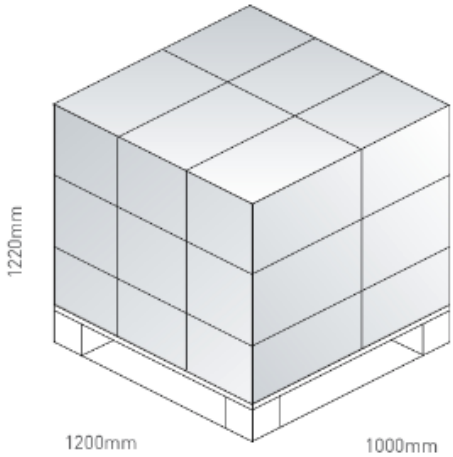
400 pcs CGGP.35.2.A.08 per Inner Carton
Inner Carton Dimensions - 270*270*300mm
Weight - 4.07kg



800 pcs CGGP.35.2.A.08 per Carton
Carton Dimensions - 560*280*335mm
Weight - 8.6kg



Pallet Dimensions 1200*1000*1220mm
18 Cartons per Pallet
6 Cartons per layer
3 Layers



Changelog for the datasheet

SPE-16-8-074 – CGGP.35.2.A.08

Revision: E (Current Version)	
Date:	2023-02-27
Changes:	Antenna Integration Guide Added
Changes Made by:	Cesar Sousa

Previous Revisions

Revision: D (Current Version)	
Date:	2020-11-23
Changes:	Updated to new format Added Moisture Sensitivity Level 3 to Environmental Specifications
Changes Made by:	Dan Cantwell

Revision: C	
Date:	2018-12-18
Changes:	Amended Automotive Rating
Changes Made by:	Jack Conroy

Revision: B	
Date:	2018-09-11
Changes:	Amended Drawing
Changes Made by:	Jack Conroy

Revision: A (Original First Release)	
Date:	2017-07-18
Notes:	
Author:	Technical Writer

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